Attachment 12

Residential New Construction BuildSmart Program Standards

Residential New Construction BuildSmart™

Trade Ally Program Standards

Effective: June 1, 2000

Florida Power & Light Company
Residential New Construction BuildSmart™
Trade Ally Program Standards

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PROGRAM OBJECTIVE

The objective of the BuildSmart™ Program is to encourage energy conservation that cost-effectively reduce FPL's coincident peak load and customers' energy consumption through the building of energy efficient residential new construction. The purpose of these standards is to instruct Program Participants in the FPL BuildSmart™ process.

PARTICIPATION REQUIREMENTS

- Program Participants include Participating Builders and owners building their own homes.
- Participating Builder must be the general building contractor. This refers to a contractor licensed by the State of Florida as a General Contractor, a Building Contractor or a Residential Contractor.
- Each Participating Builder must enter into a BuildSmart™ Program Agreement, with FPL covering the territory served by the Participating Builder, as restricted by their building license.
- Owners building their own homes must enter into a BuildSmart™ Single Home Agreement with FPL covering the location of the proposed home.
- Program Participants must comply with all national, state and local codes and ordinances.
- The BuildSmart™ Program applies only to residential single-family detached homes.
- Homes must be serviced by FPL.
- The home must have whole house electric cooling which must be supplied by a central cooling system.
- Program Participants shall provide the following data for each home to be certified in the program:
  - Floor, elevation and site plans
  - Information needed to perform the Energy Performance Index (EPI) calculations.
- The Program Participant shall pay the applicable fees to FPL for performing the selected services.
- FPL reserves the right to verify each installation for which a BuildSmart™ request has been submitted. The Program Participant shall correct any deficiency as identified through FPL inspections prior to BuildSmart™ certification of home.
- FPL will be the final judge of whether the requirements of the BuildSmart™ Program have been met.

- FPL reserves the right to modify or terminate these program standards at any time with ten (10) days written notice to the BuildSmart™ Program Participants.

BUILDSMART™ PROCESS

- Program Participant will submit to FPL for the Initial Inspection Process:
  - Floor, elevation and site plans
  - Information needed to perform the Energy Performance Index (EPI) calculations.

- FPL will perform the EPI calculation on the proposed home to determine if the home satisfies the BuildSmart™ criteria. If Program Participant elects not to participate, they may purchase the EPI calculations from FPL. This constitutes the Permit Only level of service.

- Program Participant will execute the appropriate documents and provide payment as required in the Schedule of Fees below for requested services prior to delivery of services.

- The Service Levels associated with the BuildSmart™ Program are as follows:

Service Level	Description of Service
Premium Service	Includes the initial, mid-point and final inspection
Basic Service	Includes the initial and final inspection only
Permit Only	Includes Energy Performance Index (EPI) calculations only

- If Premium Service is selected, the Program Participant will notify FPL to perform the Mid-point Inspection:
  - Prior to drywall,
  - After air conditioning duct work is installed,
  - Prior to ceiling insulation if possible, and
  - Inform FPL if temporary power is available.

- Program Participant will notify FPL to perform Final Inspection prior to certificate of occupancy. FPL will then perform the Final Inspection.

- Once the home passes Final Inspection, the builder or new home-owner will be awarded an appropriate BuildSmart™ Certificate.

FPL INSPECTION PROCESS

- **Initial Inspection:** (Inspection not limited to listing.)
  - Review floor, elevation and site plans
  - Perform EPI calculation
- **Mid-point Inspection, if applicable:** (Inspection not limited to listing.)
  - Duct system air tightness test and/or inspection
  - Air and thermal barriers

- Glass, floor and wall areas/orientation, framing and overhang lengths

- **Final Inspection**: (Inspection not limited to listing.)
  - Glass, floor and wall areas/orientation, framing and overhang lengths
  - Duct system air tightness test and/or inspection
  - Mechanical equipment verification
    Heating and cooling systems
    Domestic water heating system
  - HVAC and domestic water heating credits as allowed in the State Energy Code.
  - Final EPI calculation verification

NOTE: Premium Service includes all the steps above. Basic Service includes only the Initial and Final Inspections. Permit Only Service includes only the Initial Inspection.

BUILDSMART™ CERTIFICATION LEVELS

- BuildSmart™ home certifications will be based on the energy efficiency rating produced by the current Florida Energy Efficiency Code For Building Construction Energy Performance Index (EPI) rating. This number is obtained by using the energy rating and analysis software approved by the Department of Community Affairs (DCA). This rating is also referred to as the "e-ratio". Homes submitted for BuildSmart™ certification must achieve a minimum EPI rating of 90 and will be certified under the following levels:

BuildSmart™ Certification	EPI Rating
Gold	70 or below
Silver	80-71
Bronze	90-81

SCHEDULE OF FEES

- The fees associated with the BuildSmart™ Program are as follows:

SERVICE LEVELS	CERTIFICATION LEVELS	FEES
Premium	Bronze	$300
	Silver	$200
	Gold	$125
Basic	Bronze	$175
	Silver	$75
	Gold	$0
Permit Only	Not a BuildSmart™ Participant	$125

TECHNICAL SPECIFICATIONS OF ELIGIBILITY

- Air distribution system must meet the following criteria:

  Sealing of the ducted air distribution system may have a maximum cfm leakage of five percent (5%) of the air-conditioned square footage of the home at the final inspection and three percent (3%) at the mid-point inspection. State of Florida Energy Code approved closure systems must be used for all duct system connections.

- HVAC installations must meet the follow criteria:

  All HVAC installations must comply with any national, state and local requirements pertaining to the sizing, design, installation and operation of HVAC equipment and associated systems.

  The installation of the HVAC system must also be in accordance with the manufacturer's recommendations and specifications, including, but not limited to, refrigerant line sizes and length.

  All HVAC systems must have a **minimum SEER rating of eleven (11).**

  Central air conditioning units or heat pumps with 48,000 BTUH cooling capacity or larger will require hard start kits, approved by the manufacturer, to be installed. The hard start kits can be factory or field installed.

  The A/C filter must be easily accessible and the location must be shown to the homebuyer. An operation and maintenance manual must be provided to the resident at time of occupancy.

- For a Heat Recovery Unit (HRU) installation to be accepted as a BuildSmart™ credit, the following criteria must be met:

  All units not installed in the air-conditioning system at the factory must be rated according to the Air Conditioning and Refrigeration Institute's (ARI) Standard 470-80 with Florida regulatory modifications.

  All units must be listed in the latest Directory of Certified Refrigerant Desuperheater Heat Recovery Unit Water Heaters administered by Association of Refrigerant Desuperheater Manufacturers Inc.

  All units must be approved by Underwriters Laboratories (U.L.) or another nationally recognized testing organization in accordance with U.L. Standards.

  The HRU must be rated to meet or exceed the air conditioner size.

  The HRU must not void any warranty on the HVAC unit or the domestic water heater. Any HRU installation that voids these warranties will not qualify for BuildSmart™ credit.

An operation and maintenance manual must be provided to the resident at time of occupancy.

The domestic water heating tank minimum size as required by the Florida Energy Efficiency Code, per Section 612.1.B.3.2, for use with HRU's is as follows:

	Tank Capacity (Gallons)
Two Bedroom and up	50
One Bedroom	40

The tank must be equipped with pressure relief valves.

The lower element thermostat in the storage tank feeding directly into the dwelling must be reset to the minimum temperature.

Multiple HRU's on multiple air conditioners are allowed. If more than one air conditioning system is installed and only one HRU is installed, the HRU shall be attached to the system serving the daytime primary living areas, as described in section 612.2.A.3.1 of the Florida Energy Efficiency Code, to obtain credit.

All systems must be a permanent installation. Installations must be completed according to the manufacturer's instructions.

Water piping between the HRU and domestic water-heating tank must be limited to a total length (one way) of 70 linear feet. (See Note below.)

Refrigerant piping between the HRU and the condensing unit must be limited to a total length one way of 25 linear feet with a maximum vertical lift of 20 feet. (See Note below.)

The heat exchanger must have double walls between the refrigerant and potable water.

A control means must be provided so that the HRU can only supply warm water to the water system and also prevents over-cooling the refrigerant loop.

Heated water must enter the storage tank first or pass through a tempering valve so that it enters the dwelling at a safe temperature.

The heat exchanger should be installed within the structure where feasible. If the heat exchanger is located outdoors in an area subject to freezing temperatures, the HRU must be supplied with a freeze protection circuit.

A check valve or similar component must be installed to prevent thermo-syphoning during non-use of air conditioning units.

All accessible piping carrying hot water or refrigerant must be insulated, with tape sealing all insulated joints. All pipe insulation exposed to direct sunlight

must be protected from, or be highly resistant to, ultraviolet (UV) radiation degradation.

Note: FPL will accept manufacturer's data as to the acceptable lengths of refrigerant piping and water piping. When manufacturer's data is not available, use existing standards.

Appendix A

Energy Performance Index (EPI) Sample Form

FORM 600A-97

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Community Affairs

Residential Whole Building Performance Method A

Project Name:	South Baseline	Builder:	Demonstration
Address:	789 Example Blvd: ResFREE'97	Permitting Office:	
City, State:	South Base, FL 33105-	Permit Number:	
Owner:	DCA Codes & Standards	Jurisdiction Number:	
Climate Zone:	South		

1. New construction or existing	New	12. Cooling systems	
2. Single family or multi-family	Single family	a. Central Unit	Cap: 36.0 kBtu/hr
3. Number of units, if multi-family	1		SEER: 10.00
4. Number of Bedrooms	3	b. N/A	
5. Is this a worst case?	No		
6. Conditioned floor area (ft²)	1500 ft²	c. N/A	
7. Glass area & type			
a. Clear - single pane	0.0 ft²	13. Heating systems	
b. Clear - double pane	270.0 ft²	a. Electric Strip	Cap: 36.0 kBtu/hr
c. Tint/other SC/SHGC - single pane	0.0 ft²		COP: 1.00
d. Tint/other SC/SHGC - double pane	0.0 ft²	b. N/A	
8. Floor types			
a. Slab-On-Grade Edge Insulation	R=0.0, 160.0(p) ft	c. N/A	
b. N/A			
c. N/A		14. Hot water systems	
9. Wall types		a. Electric Resistance	Cap: 50.0 gallons
a. Frame, Wood, Exterior	R=11.0, 860.0 ft²		EF: 0.88
b. Frame, Wood, Adjacent	R=11.0, 155.0 ft²	b. N/A	
c. N/A			
d. N/A		c. Conservation credits	
e. N/A		(HR-Heat recovery, Solar	
10. Ceiling types		DHP-Dedicated heat pump)	
a. Under Attic	R=30.0, 1500.0 ft²	15. HVAC credits	
b. N/A		(CF-Ceiling fan, CV-Cross ventilation,	
c. N/A		HF-Whole house fan,	
11. Ducts		PT-Programmable Thermostat,	
a. Sup: Unc. Ret: Unc. AH: Garage	Sup. R=6.0, 120.0 ft	MZ-C-Multizone cooling,	
b. N/A		MZ-H-Multizone heating)	

Glass/Floor Area: 0.18 Total as-built points: 23483.00 Total base points: 23501.00 **PASS**

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: _____

DATE: _____

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

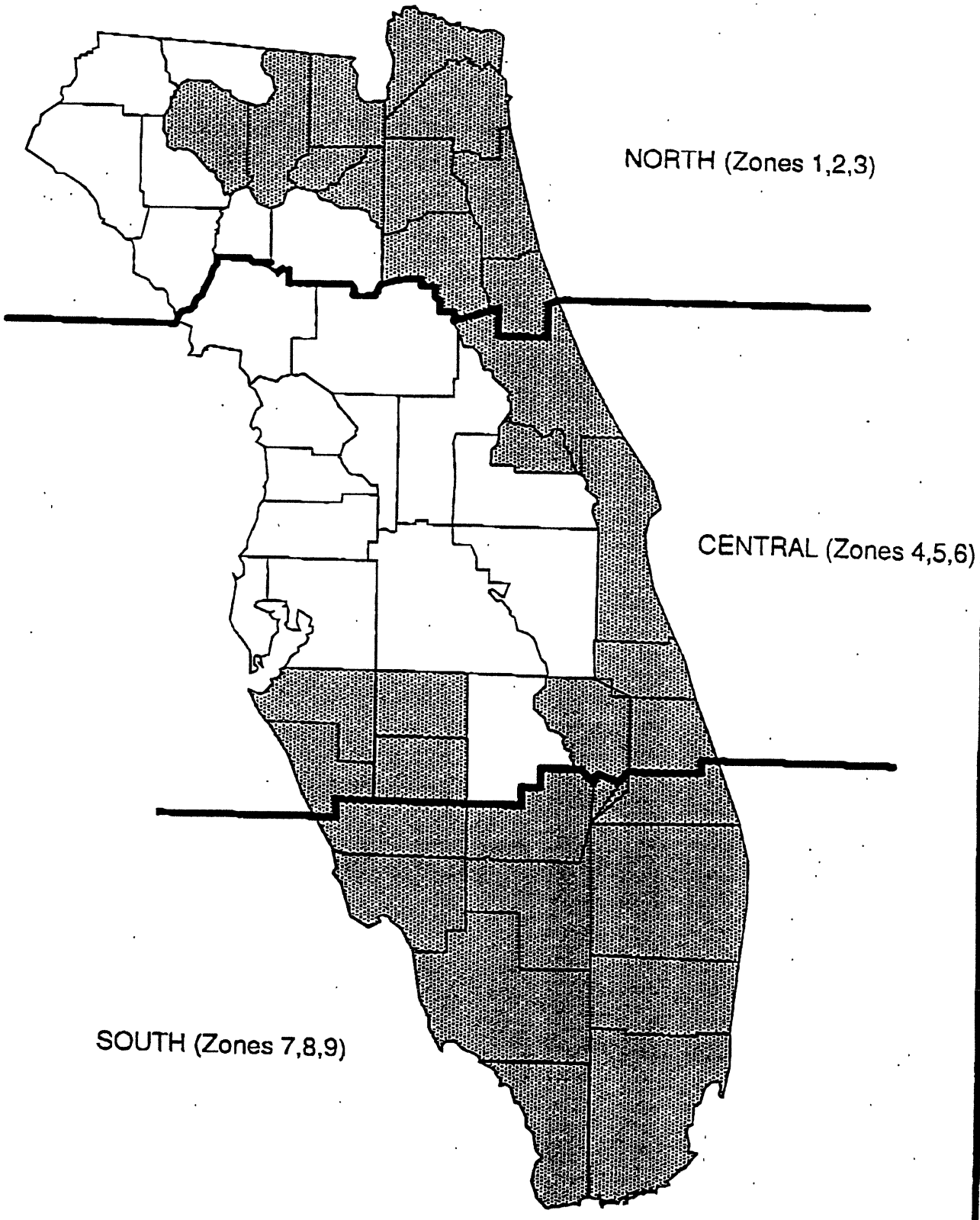
BUILDING OFFICIAL: _____

DATE: _____

Appendix B

FPL BuildSmart Service Territory and Climate Zones

FPL BuildSmart SERVICE TERRITORY and CLIMATE ZONES



Appendix C

BuildSmart Home Certificate Sample

FPL BuildSmart®

This certifies that the home at:

12345 Energy Way

has been inspected and approved as a BuildSmart Silver energy-efficient home by Florida Power & Light Company representatives who are accredited by the State of Florida to rate energy efficiency. This home exceeds state energy code requirements, benefiting the homeowner and all Floridians through lower energy use and conservation of natural resources.

FPL BuildSmart Representative

Date

CERTIFIED ENERGY EFFICIENT HOMES
FPL BuildSmart®